

**REMARKS/ARGUMENTS**

Reexamination of the captioned application is respectfully requested.

**A. SUMMARY OF THIS AMENDMENT**

By the current amendment, Applicants basically:

1. Add new dependent claim 27.
2. Respectfully traverse all prior art rejections.

**B. PATENTABILITY OF THE CLAIMS**

Claims 1, 4, 5, 7, 8, 9, 14, 15, 16, 17, 18, 19 and 20 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Publication 2003/0059991 to Teramoto et al in combination with U.S. Publication 2007/0020826 to Yamazaki, applicant's admitted prior art, U.S. Publication 2004/0201874 to Yamazaki, U.S. Publication 2005/0148119 to Fujimura, U.S. Patent 4,584,025 to Takaoka et al and U.S. Publication 2003/0148565 to Yamanaka. Claim 2 stands rejected under 35 USC 103(a) as being unpatentable over U.S. Publication 2003/0059991 to Teramoto et al in combination with U.S. Publication 2007/0020826 to Yamazaki. Claims 3, 10, 11, 12 and 13 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Publication 2003/0059991 to Teramoto et al in combination with U.S. Publication 2007/0020826 to Yamazaki and U.S. Publication 2005/014119 to Fujimura. All prior art rejections are respectfully traversed for at least the following reasons.

Applicant's claimed process results in formation of a polycrystalline microstructure in the semiconductor material layer by lateral solidification from a boundary of the region. Applicant's method results in longer lateral growth and preferably also wider crystal growth essentially uniformly. One reason that Applicant can obtain both longer and wider crystal growth is that Applicant does not, prior to

irradiation of the semiconductor material layer, perform any treatment that causes crystallization.

Although Teramoto allegedly teaches irradiating a semiconductor material layer, it is to be noted that Teramoto's heat treatment is applied prior to laser radiation to obtain a crystallized silicon film in advance, as taught, e.g., in paragraphs [0009], [0120] of Teramoto. For this early crystallization by Teramoto, a catalytic element such as Ni is introduced into the silicon film, which is then subjected to heat treatment to obtain pre-laser crystallization of the silicon film, which is then followed by laser radiation for annealing.

Similar to Teramoto, Yamazaki introduces a catalytic element to the silicon film to achieve crystallization by heating, and then only subsequently followed by laser radiation.

As indicated above, contrary to both Teramoto and Yamazaki, Applicant's method does not include a pre-irradiation crystallization step, for which reason Applicant is able to obtain superior results, e.g., longer lateral growth and preferably also wider crystal growth essentially uniformly.

Applicant's new dependent claim 27 specifically recites that Applicant's act of irradiating at least the region of the semiconductor material layer with the continuous wave laser is not preceded by crystallization of the semiconductor material. While in some modes Applicant does pre-heat the semiconductor material layer, the semiconductor material does not undergo crystallization until after irradiation.

In the case where the aforementioned pre-irradiation crystallization step is included, "repeated irradiation (in order to increase the grain size) as afforded by the crystallization action (sequential lateral solidification) does increase the length of the

needle-like crystal, but the width dimension of the crystal is not significantly enhanced", as taught in the section of the Description of the Related Art in the specification of the subject application.

Thus, since the major applied references include a crystallization step prior to laser radiation as explained above, the applied references cannot effectively increase the width dimension of the crystal grain.

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. Accordingly, Applicant respectfully requests that all prior art rejections be withdrawn. A formal indication of allowability is earnestly solicited.

### **C. MISCELLANEOUS**

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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